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Examiner Janell Combs Morillo

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Remarks/arguments

In view of the following remarks and arguments provided below, Applicant respectfully requests reconsideration of the outstanding Office Action.

1. Even though Applicant believes that Bernard cannot be used against Applicant, for the reasons given above, in the case that Bernard could be used against Applicant, which it cannot, the rejection of Claim 1 under 35 USC § 103(a) as being unpatentable over Bernard (US 5,039,479) in view of Carrano (US 6,139,652) is respectfully traversed as Examiner has not made a *prima facie* case of obviousness, as demonstrated below.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)

Bernard discloses a sterling silver composition, but does not disclose a "manganese sterling silver composition" as taught by Applicant. Applicant teaches the use manganese in his sterling silver composition to produce an alloy that exhibits the long desired properties of exceptional as-cast hardness. Carrano *et al.* teach a fine silver alloy composition that must be "age hardened" in order to produce the hardness increase that they report. The "age hardening" process used by Carrano *et al.* involves treating the sample to high temperatures.

The hardening is performed in an oxygen-containing atmosphere, such as air (which contains about 20 percent oxygen). During this stage, oxygen is diffused into the alloy composition to further internal oxidation. The rate at which the alloy is hardened depends on the temperature used and the amount of available oxygen. In the preferred process, the temperature is maintained at between 800-1300.degree. F. The hardening time varies as the square of the thickness of the alloy. Col. 9, lines 18 – 28.

Neither Applicant nor Bernhard require, or even suggest, that such a heat treatment must be used to achieve their sterling silver compositions. Moreover, applicant achieves his simple elemental metal alloys with their remarkable, surprising, and unexpected hardness results without the use of such a heat treatment annealing

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process that requires a special oven to reach temperature of 800 – 1300 degrees F, the required oven and temperatures, of course, raise the cost of manufacture substantially.

Therefore, the suggested combination of references would require a substantial redesign of the composition as shown in the primary reference as well as a change in the basic principle under which the primary reference was designed to operate. 270 F.2d at 813, 123 USPQ at 352.).

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

In order to combine the references to teach Applicant's invention, major and probably impossible modifications to the Carrano *et al.* would have to be made. A first modification would be to eliminate the high temperatures required by Carrano *et al.* that their treatment requires (identified above) in order to suggest the combination to achieve the results achieved by Applicant. This means that the invention taught by Carrano *et al.* would not be able to achieve the hardness it teaches. Therefore, if the prior art did not use the high temperatures it requires to achieve the hardness it purports to reach, it would be "inoperable" for its intended purpose.

The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

There could be no reasonable expectation of success from combining the references given that Carrano *et al.* require a special oven to reach temperature of 800 – 1300 degrees F in order to obtain the increase in hardness they teach. Moreover, Carrano *et al.* do not suggest that it is the presence of manganese, in particular, that results in an increase in hardness. Carrano *et al.* do, however, suggest that the increase in hardness is due to the heat/annealing process described above.

Therefore, it is obvious that the fine silver composition (99.99 % fine silver) taught by Carrano *et al.* requires a very different manufacturing process from that used by

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Applicant. In fact, Carrano *et al.* teach away from the composition used by Applicant, as Applicant's composition does not require the specific high heat-treatment procedure for hardening purposes Carrano *et al.* that is taught and required by Carrano *et al.* In fact, Applicant's composition for making sterling silver (92.5% fine silver) jewelry products would be useless if the specific high heat-treatment procedure for hardening purposes required by Carrano *et al.* had to be used.

Thus, for all of the reasons provided above, Applicant respectfully submits that Claim 1 is patentable over the cited reference.

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CONCLUSION

The Prior art made of record and not relied upon was considered.

In view of the remarks and arguments presented above, Applicant believes that the Application is now in condition for allowance. Accordingly, favorable consideration and allowance of Claim 1 is respectfully solicited so that the present application may speedily pass to issue.

Respectfully submitted,
For Ajit Menon, Applicant

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